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NASA Procedural Requirements

COMPLIANCE IS MANDATORY

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APPENDIX D. Plan Of Action for Emergency Electricity Reduction at Federal Facilities

General

1. Establish/enhance communications with the local utility company. Understand their needs for load reductions. Work with the local utility to develop the individual facility plan.
2. Identify load reduction measures appropriate for the facility. Investigate separating loads into: (1) Life, health and safety driven; (2) Mission critical; and, (3) Noncritical. If not separately switchable, investigate modifying systems to allow terminating or reducing noncritical loads.
3. Establish a system to alert employees of expected high demand days including, but not limited to E-mail, voice mail, or public address announcement to all employees. Communicate early to allow employees to take load reduction measures at home and to dress appropriately.
4. Monitor total facility demand and demands for individual major loads (if separate metering is available). Monitor weather forecasts to predict high demand days and be proactive in communicating with the local utility to assess need to reduce load.
5. Initiate load reduction measures. Employees can take steps to reduce lighting, personal computers and appliances electricity use. While energy efficiency should be encouraged on a daily basis, stress the need for increased diligence to alleviate the emergency. Heating and air-conditioning operating changes and other system-wide measures should be accomplished by facilities management. Federal facilities that have energy management and control systems are well suited for this task. Facilities should also consider additional measures appropriate for site specific circumstances.
6. Encourage employees to reduce electrical loads in their homes, to reduce demand on the utility system. If no one is at home during the workday, unneeded appliances and lights should be turned off, and air-conditioning thermostats should be set higher before departing for the day. Also, some utilities offer cost incentives to residential customers who allow the utility to remotely cycle off power to air-conditioning and electric water heating systems. Periods without power are limited, so that comfort is not sacrificed. Encourage employees to participate in these programs, to assist the local utility, while reducing their electricity bill.
7. Enhance employee awareness of energy efficiency through training and less formal methods. Provide mandatory and voluntary training opportunities on smart energy practices so that employees can practice energy efficiency during emergency periods and year-round. In addition to training, run public service announcements about energy efficiency on televisions in cafeterias and other public use areas; send periodic e-mail messages about turning off lights and computers and implementing other efficiency practices; post signs or billboards near light switches or communal printers; and consider holding annual energy fairs prior to seasonal emergency periods to provide additional information for employees about how to manage energy use in the work place and in their homes.

Lighting Measures

1. Turn off fluorescent lights when leaving an area for more than 1 minute. (During nonemergencies, 5 minutes is recommended, to keep from excessively reducing lamp life). Turn off incandescent lights when leaving areas for any period of time.
2. In areas with sufficient daylighting, turn off lights. Adjust blinds, if available, to reduce glare.
3. Use task lighting and turn off general lighting, where it is feasible to maintain sufficient lighting levels for safety and productivity.
4. Turn off display and decorative lighting.
5. Reduce parking lot and other exterior lighting consistent with safety and security requirements.

Personal Computers And Appliance Measures

6. Turn off printers when not in use.
7. Turn off monitors when not in use.
8. Ensure ENERGY STAR® power down features are activated.
9. If computers do not have ENERGY STAR® features available, turn them off when leaving the office for more than 30 minutes.
10. Ensure personal appliances, such as coffee pots and radios are turned off.

Heating and Air-Conditioning Measures

11. Reduce building operating schedules to limit operation of heating and cooling systems during noncore hours (e.g., nights and weekends).
12. Widen "no conditioning" temperature bands for both heating and cooling.
13. Precool building(s) below normal temperature settings prior to onset of peak demand period. Make sure to tell employees about this practice, so that they will not operate space heaters. During peak demand period, allow space temperatures to drift back up to normal settings (or as much as 5°F above normal settings).
14. Allow casual attire, to make higher temperatures more acceptable.
15. Where systems allow, lower chilled water temperatures several degrees below normal settings prior to peak periods, and allow to drift above normal settings during peak periods.
16. Duty cycle air handling units off. Ensure adequate outside air flow rates to maintain indoor air quality.
17. Ensure that ventilation grilles and fan coil units are not blocked by books, flowers, debris, or other obstructions. This will improve air-conditioning system efficiency and improve comfort.

Other

18. Operate emergency generators (many agencies have negotiated financial incentives from their local utility for operating generators). Ensure that generators have ample fuel for emergency operation and have been tested routinely. Turn off shore power to ships in dock and operate ship power systems. Make mobile utility system electrical generating equipment available to the local utility.
19. Shut off selected elevators and escalators. Ensure accessibility needs are met.
20. Where feasible, schedule high electrical energy use processes during off peak periods.
21. Encourage employees to not use copiers during peak demand period. Turn off selected copiers. Ensure power saver switch on copiers is enabled.
22. Turn off unnecessary loads such as fountain pumps.

Long Term Solutions

23. Consider purchasing interruptible power for selected loads with high electrical demand, and which will not suffer adverse consequences in the event of the utility turning off power. The cost savings from the lower rate may far outweigh the inconvenience of power being turned off within the interruption limitations agreed to in the utility

contract.

24. Consider installing submetering to identify high intensity loads to be shed during emergencies.
25. Investigate thermal storage systems or alternative energy sources for air-conditioning.
26. Install motion sensors and separate lighting circuits to allow turning off unneeded lights. (Some agencies have installed switching to separate public areas from agency work spaces).
27. Install an EMCS to allow shedding and monitoring loads from one central location. If noncritical loads are not separately switchable, modify systems to allow terminating. Local utilities or ESCO's can assist with this effort.
28. Consider adding onsite generation using micro-turbines, fuel cells, combined heat and power, renewable, or other appropriate technology.

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